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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/307,187	05/07/1999	KENNETH M. FRIEDLAND	112764.200	4512

24395 7590 09/23/2003

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EXAMINER

MEINECKE DIAZ, SUSANNA M

ART UNIT	PAPER NUMBER
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3623

DATE MAILED: 09/23/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/307,187

Applicant(s)

FRIEDLAND ET AL.

Examiner

Susanna M. Diaz

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 June 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8,10-23 and 27-83 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8,10-23 and 27-83 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on June 24, 2003 has been entered.

Claims 9 and 24-26 have been cancelled.

Claims 1, 10, 18-20, 25, and 26 have been amended.

Claims 1-8, 10-23, and 27-83 are pending.

Response to Arguments

2. Applicant's arguments with respect to claims 1-8, 10-23, and 27-83 have been considered but are moot in view of the revised art rejection, which was revised to address the Applicant's claim amendments and addition of new claims.

Claim Rejections - 35 USC § 101

3. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

4. Claims 1-8, 10-23, and 27-83 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

The basis of this rejection is set forth in a two-prong test of:

- (1) whether the invention is within the technological arts; and
- (2) whether the invention produces a useful, concrete, and tangible result.

For a claimed invention to be statutory, the claimed invention must be within the technological arts. Mere ideas in the abstract (i.e., abstract idea, law of nature, natural phenomena) that do not apply, involve, use, or advance the technological arts fail to promote the "progress of science and the useful arts" (i.e., the physical sciences as opposed to social sciences, for example) and therefore are found to be non-statutory subject matter. For a process claim to pass muster, the recited process must somehow apply, involve, use, or advance the technological arts.

As to technological arts recited in the preamble, mere recitation in the preamble (i.e., intended or field of use) or mere implication of employing a machine or article of manufacture to perform some or all of the recited steps does not confer statutory subject matter to an otherwise abstract idea unless there is positive recitation in the claim as a whole to breathe life and meaning into the preamble.

In the present case, claims 1-8, 10-23, and 27-83 only make reference to a computer in the preamble of the claims and could therefore be implemented entirely without the use of technology (e.g., manually); therefore, claims 1-8, 10-23, and 27-83 are deemed to be directed to non-statutory subject matter.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1-8, 10-23, and 27-83 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fields et al. (U.S. Patent No. 5,111,391).

As per claim 1, Fields et al. disclose a method of allocating resources including scheduling jobs from among a plurality of resources of a work-producing system, said method comprising the steps of:

(a) sorting, in a predetermined order, available resources by last task assignment, a number of tasks performable, rate per task, and cost per hour, and determining at least one queue responsive to said sorting, wherein the rate per task characterizes the units processed in the task for a time period (see column 2, lines 12-35, and column 6, lines 51-65, the resources are sorted; see column 1, lines 32-45, and column 6, lines 43-46, resources were sorted according to pay rate and rate per task -- Implicit in assessing the "percentage of an employee's time that it takes to do a particular task," as recited in col. 1, lines 34-35, is an understanding of the unit(s) of work, i.e., tasks, that the employee completes in a certain time period);

(b) assigning the available resources to at least one task with a predetermined normalized queue subject to at least one task constraint (see column 1, lines 32-45, and column 2, lines 12-35, the resources are constrained).

As per claim 2, Fields et al. discloses a method of allocating resources according to claim 1, further comprising the step of predetermining the at least one queue after assignment of the available resources, and designating the assigned resource unavailable until a predetermined time when the assigned available resources expires (see column 5, lines 59-58, through column 6, lines 1-2, the tasks are in a task line and the arrangement of the queue is determined, the resource becomes available and is able to take another item from the task list when a shift is completed).

As per claim 3, Fields et al. disclose a method of allocating resources according to claim 1, further comprising the step of incrementing time to time of a next event (see column 3, lines 58-64, column 4, lines 37-49, and column 5, lines 8-29, the time of the task is determined; the time is incremented to find the time of the next event).

As per claim 4, Fields et al. disclose a method of allocating resources according to claim 1, wherein the at least one task constraint includes maximum resource capacity, defined start and end times, and scheduled down time (see column 1, lines 32-45, and column 3, lines 9-15, task constraints include capacity and labor regulations, which define start and end times, as well as scheduled down time).

As per claim 5, Fields et al. disclose a method of allocating resources according to claim 1, wherein the at least one task constraint includes at least one team assignment constraint, and the available resources are assigned to the at least one task until the at least one team assignment constraint is satisfied (see column 1, lines 32-45, and column 2, lines 12-35, the task constrain includes a team assignment constraint such as the skill level of the employee or the relationship between the different tasks).

As per claim 6, Fields et al. disclose a method of allocating resources according to claim 1, wherein said assigning step (c), further comprises the steps of assigning the available resources to the at least one task for a maximum time of task, and removing the at least one task from a resource skill set (see column 1, lines 15-45, and column 3, lines 9-15, the maximum time of a task is determined and the task is removed from the resource when an employee maximum shift length occurs).

As per claim 7, Fields et al. disclose a method of allocating resources according to claim 1, wherein the at least constraint includes an end of shift constraint, and wherein the available resources are not assigned to the at least one task when the assignment violates the end of shift constraint (see column 3, lines 9-15, the end of shift constraint may be due to labor regulations as it could be the resource, or employee, reached their maximum shift length or their breaktime and therefore are not assigned another task).

As per claim 8, Fields et al. disclose a method of allocating resources according to claim 1, wherein the predetermined order comprises an ascending order (see column 5, lines 59-67, through column 6, lines 1-2, the resources are allocated in an ascending order, tasks that require a higher skill level are assigned to resources that have a higher skill level).

As per claim 10, Fields et al. disclose a method of allocating resources according to claim 1, wherein said sorting step (a) and said assigning step (b) are performed according to a resource allocation model, and wherein the resource allocation model includes entities with variable attributes having variable quantities that transform through at least one network of nodes (see column 6, lines 51-65, the resources, or employees, with attributes that have quantities that are transformed; for example, the number and skill level of the employees is updated during the shifts in the schedule).

As per claim 11, Fields et al. disclose a method of allocating resources according to claim 10, wherein each node of the at least one network of nodes includes an associated set of attributes and parameters (see column 6, lines 51-65, attributes and parameters are associated with the nodes).

As per claim 12, Fields et al. disclose a method of allocating resources according to claim 11. Fields et al. do teach a Gantt Chart which displays the attributes and the entities in a graphical formation. Fields et al. do not teach that the attributes are

qualitatively defined through at least one of nominal, graphical and symbolic conventions. However, it is an old and well known technique in the art to quantitatively define attributes through nominal, graphical and symbolic conventions. Pie charts, Gantt charts, and icons are commonly used to represent attributes. Therefore, it would be obvious to one of ordinary skill in the art to use a nominal, graphical, or symbolic convention to qualitatively define an attribute. One would be motivated to quantitatively define the attributes in this manner as it is a user-friendly way to depict them.

As per claim 13, Fields et al. disclose a method of allocating resources according to claim 12, wherein the available resources include the attributes of the nodes, and the available resources undergo transformational processes arriving at least one arbitrary state or passing through a series of states that may become the attributes of the resources (see column 6, lines 51-68, through column 7, lines 1-7, the resources undergo a transformation by going through a state or states).

As per claim 14, Fields et al. disclose a method of allocating resources according to claim 11, wherein the parameters are specified as at least one of inputs, outputs, capacities, operational processes, functional behaviors, movement logics, and other dynamic parameters (see column 6, lines 21-26, and 43-65, the parameters of the resources are specified).

As per claim 15, Fields et al. disclose a method of allocating resources according to claim 10, wherein the resource allocation model stores at least one of historical values, theoretical values, the attributes and constellations of the nodes, and wherein the resource allocation model provides multiple bases of comparison for monitoring, measuring, and evaluating real-time operational data and operational performance for management functions (see column 1, lines 9-15, and column 2, lines 12-35, the model stores and uses historical data which it can use to evaluate operational data and performance. It is inherent that the historical data would be kept and used for a purpose).

As per claim 16, Fields et al. disclose a method of allocating resources according to claim 10. Fields et al. teach a resource allocation model. However, Fields et al. do not explicitly teach a model that includes significance and performance criteria, associated tableaus and scenarios, and wherein abstract model elements are stored as at least one of the parameters and the attributes, and as at least one of functional, logical, graphical and symbolic forms. However, significance and performance criteria are old and well known techniques used in the art. Processes are constantly evaluated to evaluate current results and determine improvements. Therefore, it would be obvious to include significance and performance criteria as it would allow one to determine the efficiency of the scheduling. It would also be obvious to store parameters and attributes as at least one of functional, logical, graphical and symbolic forms as it would be an efficient way to display the parameters and the attributes. One would be motivated to

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include both the significance and performance criteria, as well as the stored format of the parameters as it would be very user-friendly.

As per claim 17, Fields et al. disclose a method of allocating resources according to claim 1, wherein the available resources are characterized by the following information:

- person identifier, person name, person type, shift assignment by day of week, task preference (see column 6, lines 49-65),
- shift name, shift start time, shift end time, lunch start, break 1 start, break 2 start (see column 4, lines 37-48, the shift times are set; see column 3, lines 9-15, the breaks and meal times are mandated by labor regulations),
- person type categories, eligible tasks (see column 6, lines 51-54, the skills characterize the employee),
- task name, rate per task, task capacity, task color for Gantt chart, flow percentages between tasks (see figure 3, column 1, lines 32-45, and column 6, lines 43-46, resources were sorted according to pay rate and rate per task; and task capacity),
- projected incoming volume by task and time (see column 7, lines 18-22), and
- start of day queues in each task (see column 6, lines 21-27, the record contains the start times for each task and each resource).

As per claim 18, Fields et al. disclose a method of allocating resources according to claim 1, wherein said assigning step (b) assigns the available resources using at least one of the following outputs:

- people allocation: number of people assigned to each task for each time period (see column 6, lines 21-32, the Schedule Head Record contains each persons task at a particular time period),
- queue data: queue length for each task area by time period (see column 6, lines 51-68, through column 7, lines 1-7), and
- Gantt chart: person task assignment for each time period (see figure 3).

Fields et al. do not explicitly teach that the volume data is the number of RX's processed in each task for each time period. However, it would be obvious to one of ordinary skill that in order to schedule tasks the number of tasks must be known. One of ordinary skill in the art would be motivated to include the volume data as it explicitly discloses the volume of the tasks and allows a more accurate description of the number of tasks that the user must assign to resources.

As per claim 19, Fields et al. disclose a method of allocating resources according to claim 1, wherein said assigning step (b), further comprises the steps of assigning the available resources to a varying set of tasks having varying individual rates (see column 3, lines 37-6, lines 43-46, the resources are assigned to tasks with varying rates).

As per claim 20, Fields et al. disclose a method of allocating resources according to claim 1. Fields et al. did not explicitly teach the use of Markov Chains. However, one of ordinary skill in the art would teach the assigning step (b) further comprising the steps of assigning the available resources to the at least one task with a work flow between tasks following a Markov Chain. It would have been obvious to one of ordinary skill in the art to use Markov Chains as they are a very well known type of queuing theory. One of ordinary skill in the art would have been motivated to using Markov Chains as it would allow the user to easily picture the flow between tasks. One would be motivated to use Markov Chains as they are a reliable and accurate way to depict queuing theory.

As per claim 21, Fields et al. disclose a method of allocating resources according to claim 3, wherein the next event includes at least one of a resource or task that becoming subsequently available, incoming work, a queue reaching zero, and a minimum time in the task (see column 6, lines 26-32, 51-68, through column 7, lines 1-7, once the resource and task becomes available a new task is assigned knowing the task's minimum time).

As per claim 22, Fields et al. disclose a method of allocating resources according to claim 1, further comprising the step of repeatedly performing said steps (a) - (b) until the end of a predetermined time period is reached (see column 3, lines 46-67, the steps are repeated until closing time of each store location).

As per claim 23, Fields et al. disclose a method of allocating resources according to claim 1, further comprising the step performing the at least one task responsive to the resource assigned in said assigning step (b) (see column 2, lines 12-35, the resource completes the task assigned and then performs another task).

As per claim 24, Fields et al. disclose a method of allocating resources according to claim 1. Fields et al. teach a system that can be used for any type of resource allocation. Fields et al. do not explicitly teach of the system comprising a pharmacy. However, it would be obvious to one of ordinary skill in the art to use the work producing system in a pharmacy since a pharmacy is nothing more than a specialized system (i.e. for distributing pharmaceuticals) which requires an efficient way to allocate resources and tasks. One of ordinary skill in the art would be motivated to use the system of Fields et al. in a pharmacy as it is an effective and helpful way to schedule employees in any type of resource/task environment.

As per claims 27 and 28, Fields et al. do not explicitly teach of the system comprising a pharmacy. However, it would be obvious to one of ordinary skill in the art to use the work producing system in a pharmacy since a pharmacy is nothing more than a specialized system (i.e. for distributing pharmaceuticals) which requires an efficient way to allocate resources and tasks. One of ordinary skill in the art would be motivated to use the system of Fields et al. in a pharmacy as it is an effective and helpful way to schedule employees in any type of resource/task environment. Furthermore, Official

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Notice is taken that it is old and well-known in the art that tasks in a pharmacy commonly include vertical fills, baker fills, prepack fills, front fills, narcotics fills, control fills, insulin syringe fills, managed care review, Dr. call verification, eligibility verification, drug utilization review, mail handling, phone refill handling, phone prescription handling, safing, label generating, checking, packing, manifesting, and wandling. Therefore, for the reasons set forth above, it would also have been obvious to one of ordinary skill in the art at the time of Applicant's invention to adapt Fields' invention to allocate resources for performing the tasks of vertical fills, baker fills, prepack fills, front fills, narcotics fills, control fills, insulin syringe fills, managed care review, Dr. call verification, eligibility verification, drug utilization review, mail handling, phone refill handling, phone prescription handling, safing, label generating, checking, packing, manifesting, and wandling in order to reap the benefits of Fields' effective resource allocation method in a pharmaceutical environment, thereby making Fields' invention more versatile.

As per claim 29, Fields et al. teach the rate of a resource to accomplish a task in the abstract and column 3, lines 26-34. This rate of an accomplishment is also the rate of availability of a resource. For example, if Mary can fill 60 prescription bottles in an hour, then Mary can complete a prescription bottle every minute and is available after a single minute. However, if Sally can fill 12 prescriptions in an hour, then Sally can complete a prescription bottle every five minutes and is available every five minutes. Therefore, Fields et al. does teach the rate of available resources by teaching the percent of time needed to accomplish a task. Fields et al. also teaches that this is an average rate of a group, or queue, as the shifts are optimized. In column 3, lines 40-45,

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and column 5, lines 8-34, Fields et al. teaches of an average rate of a group, or queue, since the shifts are optimized. As Fields et al. discloses the at least one queue by dividing a current task queue by an average rate of the available resources for each task in the current task queue, Fields et al. teaches all aspects of normalization.

Therefore, Fields discloses normalization as normalization is the process of the at least one queue dividing a current task queue by an average rate of the available resources for each task in the current task queue.

[Claims 31-57] Claims 31-57 recite limitations already addressed by the rejection of claims 1-8, 10-23, and 27-30 above; therefore, the same rejection applies.

[Claims 58-82] Claims 58-82 recite limitations already addressed by the rejection of claims 1-8, 10-23, and 27-30 above; therefore, the same rejection applies.

Conclusion

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Susanna M. Diaz whose telephone number is (703) 305-1337. The examiner can normally be reached on Monday-Friday, 9 am - 5 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tariq Hafiz can be reached on (703) 305-9643.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Receptionist whose telephone number is (703)308-1113.

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Any response to this action should be mailed to:


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Hand delivered responses should be brought to Crystal Park 5, 2451 Crystal Drive, Arlington, VA, 22202, 7th floor receptionist.


Susanna M. Diaz
Primary Examiner
Art Unit 3623
September 17, 2003